What Is Claimed Is:

1. A method of making a plurality of microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule, comprising:

(a) depositing one or more layers unsupported by a template, each layer comprising a transducing material, and

(b) dividing the deposited layers into the plurality of microbar encoders,

wherein the plurality of microbar encoders have substantially identical characteristic detectable signals.

2. The method of claim 1, wherein the method further comprises:

(c) detaching the microbar encoders from the substrate.

3. The method of claim 2, wherein the method further comprises, prior to depositing the one or more layers in the stack, depositing a removable layer directly onto the substrate and, after dividing the stacked layers, removing the removable layer from the substrate, wherein removing the removable layer frees the microbar encoders.

4. The method of claim 1, wherein the layers are deposited by coextrusion.

5. The method of claim 1, wherein the transducing material produces the characteristic detectable signal by electromagnetic emission or absorption.

6. The method of claim 1, wherein the transducing material is selected from the group consisting of an organic dye, an inorganic phosphor, a metal-organic phosphor, a fluorescent dye, a pigment, a scattering or absorbing powder, a three-dimensional photoluminescent dendrimer molecule, and combinations thereof.

7. The method of claim 1, wherein the transducing material is a quantum dot.

8. The method of claim 1, wherein the probe molecule is capable of binding with a target molecule.

9. The method of claim 8, wherein the probe molecule or the target molecule comprises a biological molecule.

10. The method of claim 9, wherein the biological molecule comprises a nucleic acid molecule.

11. The method of claim 9, wherein the biological molecule comprises a monoclonal or polyclonal antibody.

12. The method of claim 8, wherein the probe molecule or the target molecule comprises a small molecule.

13. The method of claim 1, wherein one or more of the deposited layers comprises a polymeric matrix.

14. The method of claim 1, wherein the deposited layers are divided by dicing or laser ablation.

15. The method of claim 1, wherein the deposited layers are divided by mechanical punching.

16. The method of claim 1, wherein the deposited layers are divided using photolithography.

17. The method of claim 16, wherein the deposited layers are divided by depositing a patterned mask layer over a surface of the deposited

layers, the mask layer protecting a portion of the surface of the deposited layers, and etching through an unprotected portion of the surface of the deposited layers.

18. A method of making a plurality of microbar sensors comprising:

(a) making a plurality of microbar encoder according to the method of claim 1 and

(b) linking a probe molecule to the plurality of microbar encoder.

19. A method of making an assembly of microbar encoders comprising:

(a) making a first plurality of microbar encoders according to the method of claim 1 and

(b) making a second plurality of microbar encoders according to the method of claim 1,

wherein the first and second plurality of microbar encoders have different characteristic detectable signals.

20. A method of making an assembly of microbar sensors comprising:

(a) making a first plurality of microbar sensors according to the method of claim 18 and

(b) making a second plurality of microbar sensors according to the method of claim 18,

wherein the first and second plurality of microbar sensors have different characteristic detectable signals.

21. A microbar encoder produced according to the method of claim 1.

22. A microbar encoder produced according to the method of claim 1, wherein only one layer is deposited.

23. A microbar sensor produced according to the method of claim 18.

24. An assembly of microbar encoders produced according to the method of claim 19.

25. An assembly of microbar sensors produced according to the method of claim 20.